United States Court of Appeals

for the Second Circuit

PETITIONER'S REPLY BRIEF

IN THE UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT

No. 74-1683

74-1683

HOOKER CHEMICALS AND PLASTICS CORPORATION
STAUFFER CHEMICAL COMPANY
AND MONSANTO COMPANY,

Petitioners,

v.

RUSSELL E. TRAIN,

Respondent.

On Petition For Review Of Action Of The
Administrator Of The Environmental
Protection Agency

REPLY BRIEF FOR PETITIONERS

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TABLE OF CONTENTS

AUTHORITIES CITED

CASES:

STATUTES:

Federal Water Pollution Control Act

CODE OF FEDERAL REGULATIONS

MISCELLANEOUS

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v.

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REPLY BRIEF FOR PETITIONERS

Preliminary Statement

This case and No. 74-1687 involve the validity of the Environmental Protection Agency regulations establishing standards of performance for new sources (No. 74-1683) and effluent limitations guidelines for existing sources (No. 74-1687) in the phosphate manufacturing category.

These cases involve, in part, the soundness of the effluent guidelines and standards of performance for the phosphate industry. The issues have been somewhat narrowed by EPA concessions that it erred in establishing the regulations for five products. As discussed below, EPA's defense for the remaining effluent guidelines for 1983 for phosphorus and phosphorus pentasulfide plants and its response to the inadequacies of the definition of "process waste water" in No. 74-1687 are not

meaningfully different from its defense of the new source standards in this case. Therefore, to avoid repetition, Petitioners have not restated in No. 74-1687 their response to EPA's arguments pertaining to the regulations for phosphorus and phosphorus pentasulfide plants and EPA's promise to redefine "process waste water" as it applies to the phosphate industry. For the convenience of the Court, Petitioners have provided in this brief parallel citations to EPA's arguments as they appear in its brief in No. 74-1687 as well as in its brief in No. 74-1683.

These actions also are related to a case before this Court, Natural Resources Defense Council v. Environmental Protection Agency, No. 74-1258. In view of the intertwined issues and parties in these cases and No. 74-1258, Petitioners have moved for accelerated scheduling of oral argument such that Nos. 74-1683 and 74-1687 may be argued concurrently with No. 74-1258.[1/]

P A R T O N E

I. DESPITE EPA'S PROTESTATIONS, ITS METHODOLOGY FOR SETTING NEW SOURCE STANDARDS DOES NOT COMPLY WITH SECTION 306 OF THE ACT

Both Petitioners and EPA seem to agree in the abstract

1/ The Petitioner in No. 74-1258, Natural Resources Defense Council, has challenged a specific portion of the regulations for the phosphate manufacturing point source category. A petitioner in these cases, Monsanto Company, has intervened in No. 74-1258. The Natural Resources Defense Council has filed a motion for leave to file as amicus curiae in No. 74-1687.

that under Section 306(a)(1), standards of performance for new sources must be both "demonstrated" and "available". And, Section 306(b)(1)(B) mandates that:

> "In establishing or revising Federal standards of performance for new sources under this section, the Administrator shall take into consideration, the cost of achieving such effluent reduction, and any non-water quality environmental impact and energy requirements."

The disagreements between EPA and Petitioners center on what EPA did not do during the rulemaking period to implement that Congressional directive and what EPA now in its brief either seeks to remedy or to sluff off as unnecessary.

A. EPA Did Not Distinguish Between Existing And New Sources.

EPA suggests that the new source standards be upheld because a new plant has water pollution control options (and economies) not available to existing plants and cites in various places to legislative history recognizing that philosophy. Resp. Br. in No. 74-1683, at 9-10, 23-24 and 27. Petitioners concur with the point made in the debate on the Act that this distinction between new and existing plant capabilities could have been worthwhile developing in the standard-setting process.

However, EPA, until its brief, did not take one single step in that direction. The rationale for the new source standards, contained in Section XI of the Development Document,

consists of paragraphs referring back to EPA's analysis of controls for existing plants and citing as the sole basis for the new source standards the fact that

> "the best practicable control technology currently available effluent limitations guidelines for all the chemicals considered in this study of the phosphate category were no discharge of process waste water pollutants to navigable waters." 1/ (Development Document, App. 1787).

Separate cost estimates were not made for new plants, but, according to EPA in its brief, cost estimates made for existing plants were relied upon in considering the cost of achieving the new source standards. Resp. Br. in No. 74-1683, at 14.

Therefore, EPA's attempt to disengage the new source standards from the errors made in establishing the effluent guidelines for existing plants rests on speculation as to what EPA might have done. It is for this reason -- identity of factual basis and rationale for new and existing sources -- that the responses of Petitioners to EPA's arguments in No. 74-1683 are not repeated in Petitioners' reply brief in No. 74-1687.

1/ Of course, the 1977 effluent guidelines as promulgated for elemental phosphorus, phosphorus oxychloride, phosphorus trichloride, and foodgrade calcium phosphate were not no discharge of process waste water. See Pet. Br. in No. 74-1683, at 13.

B. EPA Has Completely Misconstrued Its Responsibility To Apply Its Expertise.

EPA, in response to Petitioners' point that EPA has failed to provide a sound technical rationale or data base for the technologies which it claims can achieve the requirements of its regulations, has hidden behind legislative history stating that EPA is not to dictate the use of a particular technology. Resp. Br. in No. 74-1683, at 8, 14 and 34-35. Petitioners certainly agree that the end product of EPA's endeavors is to be a regulation establishing effluent requirements, not a regulation specifying the use of particular technology.

However, that Congressional directive has nothing whatsoever to do with EPA's obligation, reinforced by Section 304(c), to provide the Court with a basis for evaluating whether the Agency made a reasoned decision that its standard of performance can be achieved by best available demonstrated technology currently available. How EPA believes that the Court can fulfill its function without EPA identification of the technology to which it looked and an EPA explanation of its judgment on the performance of that technology is beyond Petitioners' comprehension.

C. EPA's Subcategorization Is Inadequate.

EPA continues to claim that its subcategorization sufficiently accounted for all important water pollution

control variables. Resp. Br. in No. 74-1683, at 15. Nonetheless, it now recognizes that a separate subcategory is needed for foodgrade sodium tripolyphosphate. Resp. Br. in No. 74-1683, at 40. The distinction between phosphorus production in severely cold and in temperate climates also appears resolvable only through further subcategorization. 1/

D. EPA Has Engaged In Post Hoc Rationalization.

Whenever the deficiencies in its reasoning process and data basis for its regulations become too overwhelming, EPA has attempted in its brief to make up for the inadequacies by conjuring up technologies that were never mentioned in the rulemaking process (Resp. Br. in No. 74-1683, at 22-23; No. 74-1687, at 65-66) or to dig out isolated citations from bibliographic literature (Resp. Br. in No. 74-1683, at 36-37; No. 74-1687, at 81-82).

These post hoc rationalizations consist of matters not considered by EPA itself during the rulemaking process or of information which EPA disclosed for the first time in its brief or otherwise after the rulemaking order had been issued. They are improper. As another Court of Appeals has said recently:

1/ See, infra, at pages 11-14.

> "It has long been settled that in reviewing an agency action and the adequacy of an agency's articulation of its action, including findings of fact and reasoning processes, courts must look to the record that was considered by the agency and to the factual findings and reasoning of the agency -- not to post hoc rationalizations of counsel or even agency members and not to evidentiary materials that were not considered by the agency. See, e.g., Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 419, 91 S. Ct. 814, 28 L. Ed. 2d 136 (1971); N.L.R.B. v. Metropolitan Life Ins. Co., 380 U.S. 438, 443-444, 85 S. Ct. 1061, 13 L. Ed. 2d 951 (1965); Burlington Truck Lines v. United States, 371 U.S. 156, 168-169, 83 S. Ct. 239, 9 L. Ed. 2d 207 (1962)." (Dry Color Mfrs. Ass'n, Inc. v. Department of Labor, 486 F.2d 98, 104, n. 8 (3d Cir., 1973).)

II. THE PHOSPHATE INDUSTRY REGULATIONS MUST BE REMANDED FOR RECONSIDERATION IN LIGHT OF THE EPA'S PROMISED REDEFINITION OF PROCESS WASTE WATER

While EPA denies that it intended to apply an "overly broad" definition of "process waste water" (Resp. Br. in No. 74-1683, at 40; No. 74-1687, at 51), it has conceded the need to promulgate an amendment to the definition of "process waste water" in 40 C.F.R. §401.11 to exclude from no discharge requirements "sporadic wastes" (Resp. Br. in No. 74-1683, at 41; No. 74-1687, at 52) such as "leaks and spills, non-contact cooling water slightly contaminated, and rainwater runoff" (Resp. Br. in No. 74-1683, at 40; No. 74-1687, at 51).

EPA has not yet promulgated, or even proposed, such an amendment. EPA's description in its brief of the intended amendment is a study in ambiguity.

Further, the action which it has promised falls short. Without explanation or justification, EPA's promise is limited to regulations which specify no discharge of process waste water even though the definition of process waste water is equally arbitrary as applied to subcategories for which limited effluent discharges are allowed.[1/]

However, Petitioners recognize that the definition of "process waste water" is closely tied to the issues raised with respect to the regulation for the specific products that were separately discussed in Petitioners' Brief[2/] and that the arbitrariness of the definition constitutes Petitioners' sole objection to the regulations for the remaining products in the phosphate category. Therefore, exclusion of non-production

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1/ For example, EPA has said it must modify the zero discharge standard of performance for phosphorus oxychloride plants, but implies that it would evaluate compliance with the new regulation by reference to a definition which EPA has said will convert 12,000 gallons per ton of cooling water (compared to 600 gallons per ton process water) into process water if it becomes slightly contaminated by process related materials (see Pet. Br. in No. 74-1683, at 21).

2/ Elemental phosphorus, phosphorus pentasulfide, phosphorus oxychloride and trichloride, foodgrade sodium tripolyphosphate, and foodgrade calcium phosphate.

related wastes could establish a degree of reasonableness that is presently lacking.

A similar set of circumstances was before the courts in Portland Cement Ass'n v. Ruckleshaus, 486 F.2d 375 (D.C. Cir. 1973), and Essex Chemical Corp. v. Ruckleshaus, 486 F.2d 427 (D.C. Cir. 1973), cert. denied sub. nom. Appalachian Power Co. v. EPA, 416 U.S. 969 (1974). In those cases, EPA proposed during the pendency of the litigation (challenging new source emissions standards for sulfuric acid plants, Portland Cement plants and steam generating facilities) regulations of general application that would introduce an element of flexibility into the application of the emissions standards during the periods of startup, shutdown and malfunction. Recognizing that the general regulation was intertwined with the issues on the specific standards, the Court remanded the emissions standards, stating:

> "If the EPA adopts, or intends to adopt, this proposed regulation, it may take the attendant flexibility [of the startup, shutdown, and upset regulations] into account, on remand, as pertinent to the manufacturer's objections, even though the new regulation has been proposed in proceeding with a different docket number and caption." Portland Cement Ass'n v. Ruckleshaus, supra, 486 F.2d at 399.

Petitioners suggest that the relief granted in the Portland Cement and Essex Chemical cases is appropriate in this

instance. The regulations for the phosphate industry (40 C.F.R. Part 422) should be set aside and remanded to EPA with the direction that it would be appropriate (indeed necessary) to reconsider these regulations in light of its promise to amend the definition of "process waste water" in 40 C.F.R. §401.11

P A R T T W O

I. EPA HAS ADMITTED TO ERROR IN ESTABLISHING REGULATIONS FOR FOUR PRODUCTS AND THOSE REGULATIONS MUST BE SET ASIDE AND REMANDED

EPA has conceded that it erred in establishing the regulations for phosphorus oxychloride (Resp. Br. in No. 74-1683, at 32-33; No. 74-1687, at 76-77), phosphorus trichloride (Resp. Br. in No. 74-1683, at 32-33; No. 74-1687, at 76-77), foodgrade sodium tripolyphosphate (Resp. Br. in No. 74-1683, at 40; No. 74-1687, at 87) and foodgrade calcium phosphate (Resp. Br. in No. 74-1683, at 40; No. 74-1687, at 87). These regulations must be set aside and remanded.

II. THE REGULATIONS FOR ELEMENTAL PHOSPHORUS PLANTS MUST BE SET ASIDE AND REMANDED

A. The Agency Must Reconsider The Regulation In Light Of Its Recognition Of The Need For Amendments Relating To Rainfall Runoff.

The Agency concurs that the regulations must be amended to make allowance for discharges "attributable to inordinate periods of precipitation." Resp. Br. in No.

74-1683, at 27-28; No. 74-1687, at 71. The regulations for phosphorus plants should be set aside and remanded to the Agency for reconsideration in light of its promise to amend the regulations to make allowance for discharges of stormwater.

B. EPA's Latter Day Theories Do Not Support A Zero Discharge Requirement For Phosphorus Plants.

1. EPA's New Theories For Plants Located In Cold Climates.

Petitioners regret that EPA considers Petitioners' argument to be "simplistic." Resp. Br. in No. 74-1683, at 21; No. 74-1687, at 63. The fact remains that Petitioners' "simplistic" argument is occasioned by EPA's approach to total recycle in cold climates -- EPA just excised any mention of it. How reference to the proposed, and then abandoned, zero discharge 1977 effluent guideline (with cites to the Draft Development Document) bolsters EPA's case for the zero discharge requirement for new plants (and 1983) completely escapes Petitioners. Resp. Br. in No. 74-1683, at 21-22; No. 74-1687, at 64-65. EPA's off-hand suggestion that new plants be located in warmer climates (Resp. Br. in No. 74-1683, at 24 and 29) represents a preposterous and unthinking forclosure of development of Rocky Mountain area phosphate deposits.

The heart of EPA's arguments, therefore, now appears to be its list of four "longstanding and aptly demonstrated technologies for preventing freezing" of treatment ponds. Resp. Br. in No. 74-1683, at 22-23; No. 74-1687, at 65-66. These supposedly longstanding technologies were not part of EPA's rationale when it promulgated the phosphorus industry regulations. In fact, EPA has implicitly conceded that the only remedy for pond freezing even indirectly suggested in the Development Document is premised on an infinitely expanding pond and that a facility without unlimited land available would have to turn to "the many suggested [in its brief] methods of keeping a pond unfrozen." Resp. Br. in No. 74-1683, at 23; No. 74-1687, at 66.

EPA should have evaluated its new remedies in the rulemaking process. Each has significant and obvious drawbacks.

EPA is correct that deep ponds do take longer to freeze than normal depth ponds; the reduced surface area in proportion to total volume of water inhibits radiation, evaporative cooling and conductive and convective heat transfer with the ambient air. Unfortunately, from the point of view of a technology for zero discharge, this configuration also inhibits evaporation and settling capability, both of which are functions of surface area.[1/] Evaporation and settling to

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1/ Surface area is of such importance in settling that rates are commonly stated in units of flow per surface area. Development Document, App. 1741.

achieve an effluent quality suitable for recycle are both necessary to achieve zero discharge.

EPA's second solution is to heat the treatment ponds Visualizing the exemplary Hooker Columbia plant's series of eight separate large ponds for treating effluent, the amount of energy required and the technology needed to transfer that energy into heat usable to keep ponds above freezing levels staggers the imagination. Certainly, in today's world consideration should be given to "enlightened use" (Resp. Br. in No. 74-1683, at 22; No. 74-1687, at 65) of all potential energy sources, and, contrary to EPA's suggestion in its brief, phosphorus manufacturers have already made maximum use of CO (carbon monoxide) to supply energy needed in the production facilities and, thus, reduce external energy requirements. A reference in EPA's brief to a potential use of waste energy sources (which, in fact, are already utilized) cannot be a basis for a conclusion that adequate, additional waste energy values can be made available at a phosphorus plant or that the technology is available to recover and apply those values to temperature control in settling ponds.

Equally implausible are the enormous mechanical clarifiers, huge buildings and means of heating them required in connection with EPA's third thesis of substituting clarifiers for treatment ponds. Furthermore, there is significant doubt as to whether mechanical clarifiers would allow complete recycle without the use of ponds. Settling ponds normally have detention times greater than seven days

while a thickner or clarifier would typically have a retention time of two hours. Development Document, App. 1741. EPA itself has noted that lime treatment to precipitate phosphates produces a "water-trapping gel" which substantially and adversely affects the effectiveness of clarifiers. Development Document, App. 1741. As a result, EPA's jump from the use of ponds to clarifiers is not justified.

EPA's final solution of some unspecified combination of deep ponds, heated ponds, and mechanical clarifiers suffers the defects of each individual proposal. The basic question is not whether "a return water source in extreme cold" can be ensured (Resp. Br. in No. 74-1683, at 23; No. 74-1687, at 66 (emphasis added)), but whether an adequate quantity and quality of water can be recycled in cold climates to allow a plant to achieve zero discharge of process water. There is simply no basis in the record to support the conclusions proferred by the Agency in its brief that total recycle can be accomplished by any combination of its newly found technologies.

2. Recycle At The Hooker Plant.

EPA has misconceived, or ignored, Petitioners' point that the record establishes that the Hooker Columbia plant does not demonstrate total recycle technology. Pet. Br. in No. 74-1683, and note 1; No. 74-1687, at 27. Petitioners do not suggest that the Hooker plant fails to achieve the result attributed to it by EPA -- zero discharge of process water except

during periods of high rainfall.

While EPA waffles on the importance of evaporative losses of water from the effluent-recycle system depending upon the point it is addressing (Resp. Br. in No. 74-1683, at 26-27; No. 74-1687, at 68-69), evaporative loss -- both from the ponds and in the process -- is a key to recycle technology and maintaining a negative water balance within a phosphorus plant. The low chloride concentration in the Hooker treatment ponds demonstrates that some water is leaving the system by other than evaporation. If it were not, the chloride concentration would increase to the point of saturation. This does not mean that effluent is being deliberately discharged at Hooker. In all likelihood it is being removed through the overflow which occurs under conditions of excessive rainfall or possibly through some small seepage.

Thus, Hooker's treatment system has a means of bleeding water to prevent build-ups of dissolved solids to levels which would inhibit or prevent recycle. It is for that reason, and only that reason, that Hooker has no additional need to bleed off water for the control of dissolved solids.

EPA's critical assumption that the process effluent at the Monsanto plants is suitable for recycle (Development Document, App. 1757) is clearly based on the erroneous conclusion that Hooker's performance results from total recycle,

and, as a result, EPA did not consider the substantial issue as to whether total recycle without bleeding the system is achievable.[1/]

It may be that reasonable provisions defining process waste water and/or allowing discharges of storm water will make zero process water discharge achievable by available technology for plants in temperate climates. Petitioners do not know, but suggest that those provisions are so integrally related to the question of the degree of recycle achievable by the phosphorus industry that they must be considered together on remand.[2/]

III. THE REGULATION FOR PHOSPHORUS PENTASULFIDE MUST BE SET ASIDE AND REMANDED

A. Inert Atmosphere And Vacuum Casting Are Not Demonstrated Technologies For Phosphorus Pentasulfide Pollution Control.

EPA has conceded that the alternative bases for the zero discharge requirement for phosphorus pentasulfide plants (inert atmosphere or vacuum casting and total recycle) have not been demonstrated, even at the pilot stage, or considered within the industry. Therefore, the issue is whether the

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1/ EPA's failure to consider the inevitable build-up of impurities in closed loop recycle systems was one of Petitioners' principal technical objections to the zero discharge requirements for foodgrade calcium phosphate (Pet. Br. in No. 74-1683, at 60-62; No. 74-1687, at 82-84), regulations which Respondent has conceded to have been based on insufficient data. Resp. Br. in No. 74-1683, at 40; No. 74-1687, at 87.

2/ While EPA labors mightly to justify its cost estimates (Resp. Br. in No. 74-1683, at 28-32; No. 74-1687, at 72-76) the fact remains that it still wishes the Court to accept that the bits and pieces of unsupported cost data in the record add up to EPA's conclusion that its cost estimates are correct and those costs are reasonable on faith and on the basis of an Economic Analysis published seven months after promulgation of the regulations.

record otherwise supports the Agency's conclusion that zero discharge technology is available. Petitioners, and the Court, are asked by EPA to accept, on faith, the proposition that inert atmosphere or vacuum casting is such "an obvious technology" that it was wholly unnecessary for EPA to discuss it in the rationale for the regulations. Yet, counsel for EPA felt compelled to go outside the record in this case to find something to support that supposedly "obvious" proposition. Resp. Br. in No. 74-1683, at 36-37; No. 74-1687, at 81-82. The Courts have firmly established that it is wholly inappropriate for EPA to try in litigation to justify a decision by reference to literature that, at best, was listed in a general bibliography prepared during the rulemaking process. Portland Cement Ass'n v. Ruckleshaus, supra, at 400.

Nevertheless, prudence dictates that Petitioners dispell any notion that the Encyclopedia of Chemical Technology cited by EPA lends credence to its regulations. Petitioners certainly cannot take issue with the first point for which the Encyclopedia is cited -- nitrogen is a relatively inert gas and has many industrial chemical applications, including in the production of phosphorus pentasulfide. Resp. Br. in No. 74-1683, at 36; No. 74-1687, at 81-82.

However, that is not the issue. The question is

whether casting of phosphorus pentasulfide in an inert atmosphere is an available technology and, if so, whether inert atmosphere casting would eliminate the need for fume scrubbers (and the consequent effluent) in a manufacturing plant. The obviousness of the technology, according to EPA's brief, is established by the reference in the Encyclopedia to the use of nitrogen to exclude air from vessels storing sodium metal. The superficiality of EPA's latter day search for support for its proposal is demonstrated by an examination of the differences between molten phosphorus pentasulfide and sodium.

Sodium has a low melting point (97.8° C), and a very high boiling point (882° C).[1/] Phosphorus pentasulfide has a much higher melting point, 286-290° C, and a much lower boiling point, 513-515° C.[2/] This means that to be handled as a liquid, as is required in casting, phosphorus pentasulfide will be much closer to its boiling point than is the case for sodium, and much larger amounts of vapors of sodium pentasulfide will contaminate the inert gas.[3/] This inert gas would in all

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1/ R.E. Kirk and D.F. Othmer, Encyclopedia of Chemical Technology, Vol. 18, at 433, Interscience, N.Y., 2d Ed., 1968.

2/ Id., Vol. 15, at 317.

3/ The atmospheric boiling point of a substance is the temperature at which its vapor pressure (or volatility) is equal to atmospheric pressure. Substances exert some vapor pressure or tendency to vaporize at all temperatures, but this tendency is greatly accelerated as the temperature increases and approaches the boiling point.

likelihood require scrubbing before it is discharged to the atmosphere or before it could be reused.

EPA's case, as described in its brief, for vacuum casting rests on the proposition that the "technology of vacuum casting is used in the same facility where molten phosphorus pentasulfide is cast" and cites to a section of the Development Document which describes purification of phosphorus pentasulfide through vacuum distillation. Resp. Br. in No. 74-1683, at 36; No. 74-1687, at 81 (emphasis added). EPA's mixing of vacuum casting and vacuum distillation is a basic technical blunder.

Vacuum casting is not feasible for the casting of phosphorus pentasulfide. If phosphorus pentasulfide (with the relatively narrow range between melting and boiling points) is exposed to a high vacuum at the temperature required for casting it will vaporize. The fact that phosphorus pentasulfide vacuum distills[1/] shows that the hot liquid phosphorus pentasulfide will boil under vacuum conditions. Casting is clearly impossible under conditions of vapor formation. Thus, vacuum

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1/ In a distillation process (such as that for purifying water), the material is boiled (vaporized) with the vapors (generally referred to as the overhead) collected and condensed by cooling.

casting is neither proven nor obvious, and in fact, threshhold technical analysis indicates that it will not work.

The foregoing deals with the theory of inert atmosphere or vacuum casting. EPA even in its brief did not touch upon the means of applying the theory in real life. This omission is wholly indefensible since the Development Document, App. 1760, candidly admits that such control techniques would be expensive and would require "major revisions not only of the casting equipment but also of the basic casting procedures * * *".

EPA's discussion of the elimination of effluents from sources other than the casting operation (Resp. Br. in 74-1683, at 37-38; No. 74-1687, at 82-84) is no less superficial than its arguments for changing the method of casting. Petitioners find it rather difficult to understand how they are obscuring the real issue (Resp. Br. in No. 74-1683, at 37; No. 74-1687, at 82) by pointing out that the Development Document explicitly and unequivocally premises zero discharge via inert atmosphere or vacuum casting on the assumption that scrubber liquid from casting is the "sole source of process waste water" in phosphorus pentasulfide manufacture. Development Document, App. 1774.

EPA's belated admission that "water uses related to the cleaning of storage vessels and other containers" cannot be considered to be process waste water provides a partial remedy to EPA's mistake if effectuated by an amendment

to the regulations. The remainder of EPA's attempt to make up for its error is not only post hoc rationalization but irrelevant and wrong in addition.

Needless to say (given EPA's misconception of effluent sources in a phosphorus pentasulfide plant), not a single one of EPA's citations in support of the regulation for phosphorus pentasulfide plants (Resp. Br. in No. 74-1683, at 37-38; No. 74-1687, at 83-84) relates to phosphorus pentasulfide production. Whatever be the merits of dry dust collection for other segments of the industry, such technology cannot be offhandedly transferred to phosphorus pentasulfide production because of safety considerations and high operating temperatures.

Although EPA states (without support) that dry baghouses have shown improvement in their ability to operate at higher temperatures (Development Document, App. 1729), Petitioners know of no fabric which can withstand the temperature of gases from the reaction and product holding area, which are in the vicinity of 300° C (570° F). Development Document, App. 1677.

The safety aspects of collecting finely divided phosphorus pentasulfide dust from any source in a dry condition also must be considered. The Encyclopedia states that these materials are considered flammable solids and in powder form "can be ignited by friction."[1/] The current use of wet

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1/ R.E. Kirk and D.F. Othmer, Encyclopedia of Chemical Technology, Vol. 15 at 319, Interscience, N.Y. 2nd ed., 1968.

scrubbers is, of course, entirely safe.[1]

B. EPA Has Added No Substance To Its Argument For Total Recycle.

EPA has provided nothing to substantiate its assertion that the technology is available for total recycle in a phosphorus pentasulfide plant. Perhaps the most telling point is that EPA continues to ignore the explicit advice of its own economic contractor -- A.D. Little[2] -- that "total recycle probably cannot be carried out or approached in present equipment." App. 1592; see Pet. Br. in No. 74-1683, at 47; No. 74-1687, at 68.

EPA has added two remarkably strange ideas in its brief in connection with its arguments for total recycle. First, it suggests that scaling is not a problem because the scale would be removed as a solid. Resp. Br. in No. 74-1683, at 39; No. 74-1687, at 85. While that may be true, the point is that the severe scaling that would be encountered would prevent total recycle. Recycle equipment can be maintained in operation only by bleeding off some of the effluent to prevent the build up of impurities that cause scaling.

1/ Cyclones followed by wet scrubbers (with the cyclone capturing the large particles and the wet scrubbers safely capturing the fine particles) might reduce, but not eliminate, scrubber effluents.

2/ EPA certainly cannot claim that it lacks confidence in A.D. Little's technical credentials since EPA retained that firm as its technical contractor for the plastic and synthetic material industry.

Second, EPA suggests that the particularly acute problem for phosphorus pentasulfide plants of build-up of sulfates and sulfites from sulfur dioxide in the fumes could be avoided by use of dry dust collection technology. Resp. Br. in No. 74-1683, at 40; No. 74-1683, at 86. The result could be that the sulfur dioxide would be emitted to the air rather than absorbed into wet scrubber effluent as sulfates or sulfites. EPA's suggestion borders on the irresponsible. The primary source of sulfur dioxide fumes is the casting operation. Total recycle is posed by EPA as an alternative to inert atmosphere or vacuum casting to prevent such fumes. For good reasons, EPA has never suggested that dry dust collection is a feasible alternative means of controlling fumes from the casting operation. Yet, in an almost off-the-cuff manner in its brief, it suggests that such an approach is "simple." The only simple aspect to the notion is that elimination of wet scrubbers is likely to result in violation of sulfur dioxide emission regulations under the Clean Air Act. Such specious reasoning cannot be sustained.

CONCLUSION

For the reasons stated above, the standards of performance for new sources in the phosphate industry should be set aside and remanded.

Respectfully submitted,

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HOOKER CHEMICALS & PLASTICS CORP., ET AL., Petitioners, v. RUSSELL E. TRAIN, Respondent.	No. 74-1683

CERTIFICATE OF SERVICE

I hereby certify that on this 19th day of December, 1974, two copies of the Reply Brief for Petitioners in the above-captioned case were served on counsel for Respondent by placing same in the United States mail, first class, postage prepaid, properly addressed to John J. Zimmerman, Attorney, Department of Justice, Washington, D.C.

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